Some Thoughts On
NSF MRE/IT Funded Tier 2 Centers

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General Comments

- Overall Plan for US Atlas Computing is influenced by many non-technical issues
- Non-technical issues pretty much dictates that NSF funding be used in significant part for Tier 2 centers in a US Atlas computing plan
  - NSF funding can not be use at DOE labs so NSF computing contributions can not be added to a DOE sited Tier 1 facility
  - The spread of NFS computing support thinly across all collaboration US Atlas universities would produce no high visibility result and so is not an alternative

Technical Issues

- With few exceptions, technical considerations favor centralizing computing resources
  - Economies of scale in procurement, operation, maintenance …
  - Flexibility in allocation, marshalling, load averaging …
  - Reduced dependence on WAN connectivity and sophisticated wide area functionality, i.e. PPD Grid, not yet developed

Technical Issues
(Continued)

- Major exception is user access to resources so …
  - Get computing on the user's side of the Atlantic (Tier 1)
  - Get computing on user's side of the network, at least the WAN, (desktop, at least institution computing)
- Distributing resources to a Tier 2 center
  - does not improve connectivity for the general user
  - does increase WAN dependence
  - does reduced economies of scale and allocation flexibility
- But as state initially technical issues are only part of the equation

Conclusions

- NSF funded Tier 2 project should therefore ...
  - keep the number centers few (and therefore their size large)
  - keep them simple (low maintenance)
  - put a substantial fraction of its funding into empowering general users/institutions to work effectively with Centers (Tier 1 or Tier 2)
    - Network connectivity
    - Local cache disks etc.
    - Enabling Wide Area Functionality PPD Grid and like development and deployment